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10/799,724	03/15/2004	Hansjorg Ander	3868-0156P	2073
2292 7590 04/02/2007 BIRCH STEWART KOLASCH & BIRCH PO BOX 747 FALLS CHURCH, VA 22040-0747			EXAMINER DESAI, ANISH P	
			ART UNIT	PAPER NUMBER
			1771	

SHORTENED STATUTORY PERIOD OF RESPONSE	NOTIFICATION DATE	DELIVERY MODE
3 MONTHS	04/02/2007	ELECTRONIC

**Please find below and/or attached an Office communication concerning this application or proceeding.**

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

Notice of this Office communication was sent electronically on the above-indicated "Notification Date" and has a shortened statutory period for reply of 3 MONTHS from 04/02/2007.

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<b>Office Action Summary</b>	<b>Application No.</b> 10/799,724	<b>Applicant(s)</b> ANDER ET AL.	
	<b>Examiner</b> Anish Desai	<b>Art Unit</b> 1771	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

#### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

- 1) ☒ Responsive to communication(s) filed on 01 March 2007.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

- 4) ☒ Claim(s) 21-33 and 35-37 is/are pending in the application.
- 4a) Of the above claim(s) 36 and 37 is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 21-33 and 35 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)                                | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                       | 5) <input type="checkbox"/> Notice of Informal Patent Application                       |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

### **DETAILED ACTION**

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed on 03/01/07 after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 03/01/07 has been entered.
2. Claims 1-20 and 34 are cancelled. Claims 21-33 and 35-37 are pending. Claims 36 and 37 are withdrawn (see below).
3. 112 rejections of claims 29, 36, and 37 are withdrawn in view of the present amendment and response (see pages 2-5 of 03/01/07 amendment). However, a new 112 rejection of claims 25 and 27 is made.
4. Art rejections that are not maintained are withdrawn.

### ***Election/Restrictions***

5. Newly amended claims 36 and 37 are directed to an invention that is independent or distinct from the invention originally claimed for the following reasons: Claims 36 and 37 are directed to a method of permanently or releasably adhesively bonding of objects. The applicant has received an action on the merits from the originally presented invention directed to a pressure-sensitive adhesive material or a sealing material (article), thus this invention has been constructively elected by original presentation for prosecution on the merits. Accordingly, claims 36 and 37 are

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withdrawn from consideration as being directed to a non-elected invention. See 37 CFR 1.142(b) and MPEP § 821.03.

### ***Claim Objections***

6. Claims 28 and 29 are objected to because of the following informalities: claims 28 and 29 depend from claim 21, which is directed to a FINAL product (i.e. PSA material or a sealing material). Claims 28 and 29 require a radiation-sensitive initiator. It is known in the art that the radiation-sensitive initiator (photoinitiator) disassociates to form a reactive element, which starts the polymer formation reaction when it is exposed to radiation. Thus, a question is raised whether in the FINAL product any radiation-sensitive initiator will be present or not.

### ***Claim Rejections - 35 USC § 112***

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

7. Claims 25 and 27 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. Claims 25 recites "styrene", there is insufficient antecedent basis for this limitation in the claim. Claim 27 requires that epoxide acrylate be a homopolymer of glycidyl (meth)acrylate. It is noted that epoxide acrylate is a monomer, therefore it is not clear as to how can a homopolymer of a compound such as glycidyl (meth)acrylate be a monomer? For the purpose of the examination, any reference disclosing a homopolymer of glycidyl (meth)acrylate will read on epoxide acrylate as instantly claimed.

***Claim Rejections - 35 USC § 102/103***

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

8. Claims 21, 23, 28, 30, 32, 33, and 35 are rejected under 35 U.S.C. 102(b) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over Bonk et al. (US 4,731,273).

Regarding claim 21, Bonk teaches a heat-recoverable closure with a crosslinked pressure-sensitive adhesive (PSA) (abstract) wherein the PSA of Bonk comprises acrylate terpolymer and a crosslinking agent (column 2 line 61 and column 3 line 1). Additionally, the PSA of Bonk comprises dimethacrylate (column 5, line 43). As shown in the Figure 1 of Bonk, the PSA layer 3 has a three-dimensional structure and a semicircular cross-sectional contour. Alternatively, Bonk teaches that the PSA tape can be immediately wound upon itself into a roll form for storage or shipment (column 6, lines 19-21). The PSA tape of Bonk in a rolled form would have a three-dimensional (3D) structure and a round cross-sectional contour.

It is noted that the recitation "material is produced by polymerization of a polymerizable mass comprising at least one compound selected from the group consisting of" is related to a product by process limitation. Note that the products by process claims are not limited to the manipulations of the recited steps, only the structure implied by the steps. "Even though product by process claims are limited by and defined by the process, determination of patentability is based on the product itself. The patentability of a product does not depend on its method of production. If the product in the product by process claim is the same as or obvious from a product of the prior art, the claim is unpatentable even though the prior product was made by a different process." *In re Thorpe*, 227 USPQ 964, 966 (Fed. Cir. 1985). Once the Examiner provides a rationale tending to show that the claimed product appears to be the same or similar to that of the prior art, although produced by a different process, the burden shifts to applicant to come forward with evidence establishing an unobvious difference between the claimed product and the prior art product. *In re Marosi*, 218 USPQ 289, 292 (Fed. Cir. 1983). In the presently claimed invention, the PSA adhesive material or sealing material of the applicant has a 3D structure and a defined cross-sectional contour (as required by claim 21) wherein said material is produced by polymerizing a polymerizable compound such as di-(meth)acrylate. Bonk teaches a heat-recoverable closure with a crosslinked pressure-sensitive adhesive (PSA) (abstract). The PSA of Bonk comprises dimethacrylate (column 5, line 43). As shown in the Figure 1 of Bonk, the PSA layer 3 has a 3D structure (length\*width\*height) and a semicircular cross-sectional contour. Alternatively, Bonk teaches that the PSA tape can

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be immediately wound upon itself into a roll form for storage or shipment (column 6, lines 19-21). The PSA tape of Bonk in a rolled form would have a 3D structure and a round cross-sectional contour. Thus, the PSA material or a sealing material of Bonk is similar to the applicant's PSA material or a sealing material.

With respect to claim 23, Bonk teaches a polyfunctional acrylate monomer is any compound having two or more acrylate or methacrylate functionalities per molecule (column 5, lines 38-40) and discloses pentaerythritol tetra-acrylate (column 5, line 45).

Regarding claim 28, Bonk teaches that addition polymerization is preferably accomplished by the use of a use of a photoinitiator and radiation (e.g. UV). According to Bonk, particular techniques of polymerization are disclosed in US Pat 4,181,752 (column 4, lines 30-37). The US Pat 4,181,752 discloses use of 0.01 to 5 parts of a photoinitiator (column 4, lines 7-8).

With respect to claim 30, Bonk teaches that it has been found desirable to incorporate in the adhesive composition reinforcing filler such as metal oxide (column 7, lines 48-53) in the amount of about 2% to about 7% by weight (column 7, lines 59-60).

With respect to claim 32, Bonk teaches the adhesive comprising fumed silica (column 7, line 58). The fumed silica is a known pigment (colorant) as evidenced by US 5,229,212. The US 5,229,212 discloses "Other additives may include, for example...pigment such as fumed silica...dimethylmaleate." (column 7, lines 40-48). The fumed silica of Bonk is used in the amount of 2 to 7% by weight (column 7, lines 59-60).

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Regarding claim 33, Bonk teaches the adhesive comprising a crosslinking agent in an amount of from about 0.8% to about 10% by weight (column 3, lines 7-8).

With regards to claim 35, the PSA of Bonk is in the form of strips (Figure 1).

9. Claims 21 and 22 are rejected under 35 U.S.C. 102(b) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over Woods (US 4,414,275).

Woods teaches a flexible adhesive tape that can be used as sealants (column 2, lines 53-54). According to Woods, the adhesive composition is based upon one or more acrylate (including methacrylate) monomers generally to the art for adhesive purpose (column 3 lines 67-68 and column 4 lines 1-2). Further the adhesive tape of Woods comprises polymerizable acrylate ester monomers such as isobornyl methacrylate (column 4, lines 60-62). Moreover, Woods teaches that the tape is wound into a spiral roll (column 7, lines 24-25). The tape of Woods in a rolled form would have a 3D structure and a round cross-sectional contour.

As to the recitation "material is produced by polymerization of a polymerizable mass comprising at least one compound selected from the group consisting of", as previously noted said recitation is related to a product by process limitation and as shown above the product of Wood (adhesive tape) is similar to the applicant's pressure-sensitive adhesive material or a sealing material.

10. Claims 21, 24, 26, and 27 are rejected under 35 U.S.C. 103(a) as being unpatentable over Komiyama et al. (US 5,118,567) in view of Woods (US 4,414,275).

With respect to claim 21, Komiyama teaches an adhesive tape comprising an adhesive layer formed on one surface of the base sheet wherein the adhesive layer



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comprises a (meth)acrylate polymer, an epoxy resin, a photopolymerizable low molecular weight compound, and a heat activable potential curing agent for the epoxy resin and a photopolymerization initiator for the photopolymerizable low molecular weight compound (abstract). As to the limitation of 3D structure, a defined cross-sectional contour, and continuous material, the tape of Komiyama necessarily has a 3D structure, a defined cross-sectional contour, and it is continuous. Further, with respect to the limitation of "material is produced by polymerization of a polymerizable mass comprising at least one compound selected from the group consisting of" is related to a product by process limitation.

With regards to claim 21, Komiyama is silent with respect to teaching of a PSA material or a sealing material having a round, semicircular, oval, elliptical, triangular, quadrangular, polygonal or irregular cross-sectional contour and it is present as rolled material. The invention of Woods is previously disclosed. As previously noted, Woods teaches that the tape is wound into a spiral roll (column 7, lines 24-25). The tape of Woods in a rolled form would have a 3D structure and a round cross-sectional contour. Thus, it would have been obvious to one having ordinary skill in the art at the time the invention was made to wound the PSA tape of Komiyama as taught by Woods, motivated by the desire to easily package and store the PSA tape.

With respect to claim 24, Komiyama teaches an adhesive comprising vinyl acetate (column 3, lines 39-40).

With respect to claim 26, Komiyama teaches that examples of epoxy resin include glycidyl ethers of a phenol such as Bisphenol A (column 3, lines 60-63).

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With regards to claim 27, Komiyama teaches that the (meth) acrylate polymer may be a homopolymer of (meth)acrylate (column 3, lines 31-32). Additionally, Komiyama discloses that the term “(meth)acrylate polymer” used herein is meant polymers primarily (at least 50 mol%) comprising structural units derived from at least one (meth) acrylate i.e. acrylate or methacrylate. Examples of the suitable (meth)acrylates include, for example, glycidyl acrylate and methacrylate (column 3, lines 21-27). This disclosure is interpreted as the entire (meth)acrylate polymer can be formed of a structural units derived from glycidyl methacrylate, which reads on the epoxide acrylate is a homopolymer of glycidyl (methacrylate).

11. Claims 21, 25, and 31 are rejected under 35 U.S.C. 102(b) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious unpatentable over Polski et al. (US 5,599,601).

Polski teaches a disposable tape tab for a diaper with at least a fastening tape tab portion and a release tape tab portion wherein the fastening surface on the fastening tape tab is a PSA (abstract). Further, Polski teaches that the fastening tape and release tape are designed to be supplied as separate tape elements (column 1, lines 5-10). The fastening tape tab portion (a PSA material) of Polski is wound into a tape roll (column 2 lines 21-24). Further, Polski teaches the laminate closure tape can easily be formed by separately laminating a release tape tab portion with a fastening tape tab portion on the diaper line from separate tape components supplied in roll form (column 7, lines 22-26). Thus, in a roll form the fastening tape tab (a PSA material) of Polski would have a 3D structure and round cross-sectional contour. Further, Polski

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teaches an adhesive comprising vinyl ester and styrene (column 4, lines 24-25 and column 5 lines 60-62). Additionally, Polski discloses polymerization of PSA (column 4, lines 11-13 and lines 66-67).

As to the recitation "material is produced by polymerization of a polymerizable mass comprising at least one compound selected from the group consisting of", as previously noted said recitation is related to a product by process limitation and as shown above the fastening tape tab of Polski is similar to the applicant's pressure-sensitive adhesive material or a sealing material.

With respect to claim 31, Polski teaches that other useful materials such as fire retardants (flame-proofing agent) can be blended into the adhesive matrix (column 5, lines 18-21). It is also noted that the applicant has admitted that the presence of a flame-proofing agent is not claimed to be a feature providing novelty to the 3D PSA system of the present invention (see pages 12-13 of 03/01/07 amendment). Polski teaches addition of flame proofing agent in the adhesive except for the amount of flame proofing agent, however since the general conditions of the claims are disclosed by Polski; namely Polski teaches a PSA material comprising vinyl ester and styrene wherein fire retardants can be blended into the adhesive, it would have been obvious to one having ordinary skill in the art at the time the invention was made to optimize the amount of flame-proofing agent in the adhesive layer, since it has been held that where the general conditions of a claim are disclosed in the prior art, discovering the optimum or workable ranges involves only routine skill in the art (*In re Aller*, 105 USPQ 233).

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12. Claims 29 is rejected under 35 U.S.C. 103(a) as being unpatentable over Bonk et al. (US 4,731,273) in view of Lautenschlaeger et al. (US 4,814,215).

The invention of Bonk is previously disclosed. Bonk discloses use of a radiation-sensitive initiator but Bonk is silent with respect to teaching of a radiation-sensitive initiator as instantly claimed. However, Lautenschlaeger discloses an adhesive composition, process and product. Further, Lautenschlaeger discloses that various mastic products, for example, sealants and preformed tapes and strips are known for mounting window glass (column 1, lines 37-39). Moreover, Lautenschlaeger discloses that photo-initiators are used to increase the rate of cure in the case of cure by UV radiation (column 11, lines 42-43). Further, Lautenschlaeger discloses typical examples of photoinitiators such as Irgacure 184 (1-hydroxy-cyclohexyl-phenyl-ketone) (column 11, lines 47-48). Thus, it would have been obvious to one having ordinary skill in the art at the time the invention was made to choose a suitable photoinitiator from the examples of photoinitiators provided by Lautenschlaeger in the adhesive of Bonk, because selecting a known compound to meet known requirements involves routine skill in the art.

### ***Response to Arguments***

13. Applicant's arguments filed 03/01/07 have been fully considered but they are not persuasive. For convenience, the examiner has addressed the applicant's arguments in the same order as presented by the applicant.

With respect to art rejections over Woods (US 4,414,275), applicant asserts that the tapes of Woods have a flat, two-dimensional geometry and thus a direct relation to

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the endless 3D systems or rolls of strings or polygons as being subject matter of the instant application can not be seen (paragraph 3, page 9 of 03/01/07 amendment). The examiner respectfully disagrees. The claims require that the PSA material or a sealing material have a round, semicircular, oval, elliptical, triangular, quadrangular, polygonal or irregular cross-sectional contour. As previously noted, Woods teaches that the tape is wound into a spiral roll (column 7, lines 24-25). Hence, the tape of Woods in a rolled form would necessarily have a 3D structure and a round cross-sectional contour. Accordingly, art rejections are maintained.

It is noted that the applicant has admitted that the chemistry of the PSA tape disclosed by Wood is very similar to the present application because it is known that the PSA can only be produced from a limited group of monomers, preferably from acrylate (paragraph 4, page 9 of 03/01/07 amendment).

With respect to the art rejections of Bonk et al. (US 4,731,273), the applicant argues that Bonk merely describes a material to wrap pipes. Further, the applicant asserts that this is [product or Bonk] definitely a product, which is designated to be almost two dimensional in the present application and clearly distinguished from the claimed 3D products. Further, the applicant argues that Bonk teaches heat activable films and such systems are not subject of the present invention rather the systems of the instantly claimed invention are PSA at room temperature (paragraphs 1-2, page 13 of 03/01/07 amendment). The examiner respectfully disagrees. The claim requires that a PSA material or a sealing material has a 3D structure and a defined cross-sectional contour wherein the cross-sectional contour can be a round, semicircular, oval, elliptical,

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triangular, quadrangular, polygonal or irregular. As previously noted, as shown in the Figure 1 of Bonk, the PSA layer 3 of Bonk has a 3D structure and a semicircular cross-sectional contour. Alternatively, Bonk teaches that the PSA tape can be immediately wound upon itself into a roll form for storage or shipment (column 6, lines 19-21). The PSA tape of Bonk in a rolled form would have 3D structure and a round cross-sectional contour. As to the applicant's argument about heat activable films, said arguments are not found persuasive because claims do not require that the PSA material is PSA at a room temperature, claims only recite "A pressure-sensitive adhesive material or a sealing material". Bonk teaches a pressure-sensitive heat activable adhesive tape (column 6, lines 17-18), which reads on the pressure-sensitive adhesive material as instantly claimed. Accordingly, art rejections are maintained.

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**Conclusion**

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Anish Desai whose telephone number is 571-272-6467. The examiner can normally be reached on Monday-Friday, 8:00AM-4:30PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Terrel Morris can be reached on 571-272-1478. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

APD

  
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